

The opinion in support of the decision being entered today
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HERIBERT SCHWARZ,
THOMAS SEITH and
ARTUR WEIGAND

Appeal 2007-2193
Application 10/816,369
Technology Center 1700

Decided: August 16, 2007

Before BRADLEY R. GARRIS, THOMAS A. WALTZ, and
CATHERINE Q. TIMM, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 1-7, 9, 11, and 13-22.¹ We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

¹ Claim 18 is not included in the “Claims Appendix” of the Brief. However, it is clear from the record and Appellants’ statement that “Claims 1-7, 9, 11

We AFFIRM.

INTRODUCTION

Appellants claim a device for sucking up particles comprising, in relevant part, a partition TW separating said collection chamber SR from said reception chamber MR and having a partition surface, said partition TW having an inlet orifice formed therein for channeling an air stream from said collection chamber SR to said suction device GB, MO, the inlet orifice of said partition TW coupling said collection chamber SR to said suction device GB, MO in said reception chamber MR (Figure 3; claim 1).

Appellants disclose that the larger the inlet orifice in the partition TW, the less resistance opposes the air stream directed toward the suction device, which avoids an excessive pressure from the collection chamber SR to the reception chamber MR (Specification 3).

Claims 1, 11, and 13 are illustrative:

1. A device for sucking up particles to be collected, the device comprising:

at least one collection chamber for accumulating the particles;

a suction device;

at least one reception chamber storing said suction device;

a partition separating said collection chamber from said reception chamber and having a partition surface, said partition having an inlet orifice formed therein for channeling an air stream from said collection chamber to

and 13-22 are pending in the application, all of which are rejected and on Appeal” (Br. 5) that claim 18 is pending and on appeal.

said suction device, said inlet orifice of said partition coupling said collection chamber to said suction device in said reception chamber;

an air guide funnel having an entry surface forming a part of said partition surface;

an intervention guard element connected to the air guide funnel and projecting in a direction toward said collection chamber; [and]

a filter bag disposed in said collection space for accumulating the particles.

11. The device according to claim 1, further comprising at least one filter element for purifying the air stream from said collection chamber to said suction device, said filter element is disposed upstream of said entry surface of said air guide funnel.

13. A vacuum cleaner, comprising:

a collection chamber for accumulating particles;

a suction device generating an air flow;

a reception chamber housing the suction device;

a partition separating the collection chamber from the reception chamber and defining an inlet orifice receiving the air flow from the collection chamber;

an air guide funnel connected to the partition at the inlet orifice and extending away [from] the collection chamber to an exit orifice, the inlet orifice having a substantially rectangular cross-section and the exit orifice having a substantially circular cross-section; and

an intervention guard element connected to the air guide funnel and projecting in a direction toward the collection chamber.

The Examiner relies on the following prior art references as evidence of unpatentability:

Kuwahara	US 3,454,978	July 15, 1969
Yip	US 6,125,501	Oct. 3, 2000

The rejections as presented by the Examiner are as follows:

1. Claims 1, 2, 4-7, 9, and 11 are rejected under 35 U.S.C. § 102(b) as being unpatentable over Kuwahara.
2. Claims 3 and 13-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuwahara in view of Yip.

Appellants separately argue independent claims 1, 13, and 19, and dependent claims 11 and 15. Accordingly, dependent claims 2-7, 9, 14, 16-18, and 20-22 stand or fall with the respective independent claims from which they depend.

OPINION

35 U.S.C. § 102(b) OVER KUWAHARA

CLAIM 1

Appellants argue that Kuwahara does not disclose “a partition separating said collection chamber from said reception chamber and having a partition surface, said partition having an inlet orifice formed therein for channeling an air stream from said collection chamber to said suction device, said inlet orifice of said partition coupling said collection chamber to said suction device in said reception chamber” as recited in claim 1 (Br. 10-11). Specifically, Appellants' argument is directed to the portion of the “partition” claim feature that recites, “said inlet orifice of said partition

coupling said collection chamber to said suction device in said reception chamber” (Br. 11). Appellants contend that Kuwahara requires that space “c” be formed between the motor 15 and partition 8 to allow formation of a Venturi effect (Br. 11). According to Appellants, coupling Kuwahara’s motor 15 to the partition 8 would eliminate the space “c,” and thus the sought after Venturi effect, such that Kuwahara does not disclose coupling the collection chamber to the suction device in the reception chamber via an inlet orifice (Br. 11).

We have considered all of Appellants’ arguments and find them unpersuasive for the reasons below.

During examination, “claims ... are to be given their broadest reasonable interpretation consistent with the specification, and ... claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004). An applicant “may demonstrate an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” *American Academy of Science*, 367 F.3d at 1365, 70 USPQ2d at 1831. Construing claims broadly during prosecution is not unfair to the applicant, because the applicant has the opportunity to amend the claims to obtain more precise claim coverage. *Id.*

Appellants’ claim 1 recites, in relevant part, “inlet orifice of said partition coupling said collection chamber to said suction device in said reception chamber” (claim 1). Appellants’ arguments regarding this claim feature are premised on a direct, physical connection between the inlet

orifice and the collection chamber and the suction device in the reception chamber (Br. 10-11). The Examiner does not dispute that Kuwahara does not disclose physical, direct contact between the partition and the suction device (Answer 8).

Rather, the Examiner construes the claim phrase “inlet orifice of said partition coupling said collection chamber to said suction device in said reception chamber” as including Kuwahara’s fluidic coupling of the dust collection chamber 7 (i.e., collection chamber) to the motor 15 and fan 23 (i.e., suction device) in the tubular portion 13 (i.e., reception chamber) via an annular spout 9 (i.e., inlet orifice) (Answer 3-4, 7). Moreover, the Examiner indicates that the claims do not require “physical, direct connection” between the partition and the suction device (Answer 8). We agree.

An “orifice” is synonymous with a “hole.”² By virtue of the “inlet orifice” being a “hole” the only possible way for an “orifice” (i.e., hole) to couple the collection chamber and the suction device with one another is in a fluidic manner (i.e., by virtue of the air passing from the collection chamber to the suction device via the inlet orifice). Appellants’ Specification does not use “expressions of manifest exclusion or restriction” in describing an “inlet orifice” that would restrict the Examiner’s construction of such claim term. *American Academy of Science*, 367 F.3d at 1365, 70 USPQ2d at 1831.

In light of the all the evidence, we determine that the Examiner has reasonably, and consistent with Appellants’ Specification, construed the claim phrase “inlet orifice of said partition coupling said collection chamber to said suction device in said reception chamber.” *American Academy of*

² *McGraw-Hill Dictionary of Scientific and Technical Terms*, 1409 (5th Ed. 1994).

Science Tech Center, 367 F.3d at 1364, 70 USPQ2d at 1830. The Examiner's reasonable and consistent construction of the above claim phrase includes fluidic coupling of the collection chamber to the suction device via an inlet orifice.

For the above reasons, we affirm the Examiner's § 102(b) rejection of argued claim 1 and non-argued dependent claims 2, 4-7, and 9 over Kuwahara.

DEPENDENT CLAIM 11

Appellants argue that the "intervention guard" recited in claim 1 and the "filter" of claim 11 are separate elements, such that the Examiner's citation to Kuwahara's filter 37 as disclosing both features is improper (Br. 11-12). Specifically, Appellants argue that if Kuwahara's filter 37 is the "intervention guard" connected to the air guide funnel, then "it [i.e., filter 37] cannot also be disposed upstream of the entry surface of the air guide funnel" as required of the filter in claim 11 (Br. 12).

We have considered all of Appellants' arguments and are unpersuaded for the reasons below.

During examination, "claims ... are to be given their broadest reasonable interpretation consistent with the specification, and ... claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art." *American Academy of Science Tech Center*, 367 F.3d at 1364, 70 USPQ2d at 1830.

Claim 11 depends from claim 1 and recites, in relevant part, "at least one filter element . . . disposed upstream of said entry surface of said air guide funnel" (claim 11). The Examiner construes "at least one filter

element” as corresponding to Kuwahara’s dust filter 37 (Answer 4, 10), and the “intervention guard” of claim 1 as corresponding the rib structure shown in Kuwahara’s Figure 1 referred to as filter 37 (Answer 4, 10). We agree.

Claim 11 does not require that the filter be separate from the intervention guard. Rather, as shown by Kuwahara’s Figure 1, the dust filter may comprise a rib-like structure (i.e., intervention guard) with a mesh-like filter element (i.e., filter) supported thereon (Figure 1, reference numeral 37).³ Moreover, a filter element supported on the rib-like structure (i.e., intervention guard) would be positioned “upstream of said entry surface of said air guide funnel” (claim 11). The “entry surface” is broadly claimed as “forming a part of said partition surface” (claim 1). Accordingly, as shown in Kuwahara’s Figure 1, a filter element 37, which is disposed upon the rib-like structure shown in the drawings, would be upstream of, for example, the portion of the annular spout 9 leading to the location where the filter 37 is attached to the annular spout 9 of partition 8 (Kuwahara, Figure 1, reference numerals 8, 9, 37).

Furthermore, the knowledge of a skilled artisan would include an arrangement wherein the filter element is upstream of the annular spout 9 (i.e., air guide funnel) and the rib-like structure (i.e., intervention guard) of the dust filter 37, otherwise, the suction created by the motor 15 and fan 23 would suck the filter element into the fan 23. Therefore, one of ordinary skill in the art would understand Kuwahara to disclose that a filter element is placed over and upstream of the rib-like structure (i.e., intervention guard). A reference anticipates a claim if it discloses the claimed invention such that

³ Appellants do not contest that Kuwahara’s dust filter 37 includes a removable mesh-type filter (Br. 16).

a skilled artisan could take its teachings, in combination with his own knowledge of the particular art, and be in possession of the invention. *In re Graves*, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995) citing *In re LeGrice*, 301 F.2d 929, 936, 133 USPQ 365, 372 (CCPA 1962).

We affirm the Examiner's § 102(b) rejection of claim 11 over Kuwahara.

35 U.S.C. § 103(a) REJECTION OVER KUWAHARA IN VIEW OF YIP CLAIMS 13 AND 19

Appellants argue that neither Yip nor Kuwahara disclose that the exit orifice has a “substantially circular cross-section” as recited in claims 13 and 19 (Br. 13, 17). Appellants argue that if Yip has a circular exit orifice then there should be a difference in the shading of Yip's cross-sectional view shown in Figure 1 (Br. 13).

Appellants further argue that because Kuwahara discloses tubular and round sections in the vacuum to create a Venturi effect, there would have been no motivation to combine Yip's rectangular inlet orifice with Kuwahara (Br. 14-15, 17). Appellants argue that combining Yip's rectangular inlet orifice with Kuwahara's vacuum cleaner would have disrupted the smooth flow required for Kuwahara's Venturi effect, such that the combination would have rendered Kuwahara unsatisfactory for its intended purpose (Br. 16). Appellants argue that using a rectangular opening would not have been a mere change in shape under *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966), because the rectangular shape is significant (i.e., critical) to achieving the desired noise and turbulence reduction (Br. 15).

We have considered all of Appellants' arguments and are unpersuaded for the reasons below.

Yip discloses a vacuum cleaner having a "generally square opening 20" that leads via frustoconical passage 22 to a rear opening 24 (Yip, col. 1, ll. 64-67, col. 2, ll. 12-25).

The Examiner determines that the arc-shaped object visible through lattice 88 in Yip's Figure 3 is a circular exit orifice (Answer 6, 10). Moreover, the Examiner, responding to Appellants' argument that a difference in shading would be used in Yip's Figure 1 if the exit orifice were circular, states that Yip's Figure 3 is relied upon to show the circular exit orifice because Yip's Figure 1 is a two-dimensional, cross-sectional view of the vacuum cleaner (i.e., orthogonal to the cleaner) (Answer 10). The Examiner contends that regardless of the shading, Yip's two dimensional, cross-sectional view shown in Figure 1 would not be able to convey the shape of the exit orifice (Answer 10).

The Examiner further indicates that Yip uses a centrifugal impeller to provide the vacuum, which is composed of an impeller sandwiched between two end plates (Answer 10). The Examiner further reasons that the end plate of the impeller that mates with rear opening 24 would have a circular opening to avoid air disturbance (e.g., turbulence) that would be associated with a square or rectangular opening (Answer 11).

We agree with the Examiner's findings regarding Yip's disclosure. Like the Examiner, we find that Yip's rear opening 24 (i.e., exit orifice) is circular. Accordingly, Yip discloses Appellants' claim feature of an exit orifice having a "substantially circular cross-section."

Regarding Appellants' lack of motivation argument, Kuwahara discloses that the Venturi effect occurs at passage "d," which is formed between the annular spout 9 and partition 13 (Kuwahara, col. 2, ll. 44-60; Figure 2). Accordingly, as the Examiner indicates, the smooth shape is critical at the exit orifice, not the entry orifice, of the annular spout 9 (Answer 12). Therefore, combining a rectangular entry orifice with Kuwahara's partition 8 in the vacuum cleaner would not disrupt the smooth flow required for producing a Venturi effect at the exit orifice of the annular spout 9 as argued by Appellants.

Moreover, Appellants have not persuaded us that using a rectangular shape for the inlet orifice is significant (i.e., critical) to their invention, such that it is not merely an obvious change in shape under *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). First, the portion of the Specification cited by Appellants, page 3, lines 13-25, as establishing the criticality of the rectangular shape, does not establish that the rectangular shape is critical (Br. 15). Rather, the cited portion indicates that the *size* of the entry surface, not the shape, is critical to reduce resistance and air turbulence (Specification 3:19-23).

Second, Appellants provide no factual comparison of a rectangular shaped inlet orifice with inlet orifices of different shapes, such as a circular shaped inlet orifice, to establish the alleged criticality of the inlet orifice shape. Rather, Appellants rely on attorney arguments to establish the criticality of the rectangular inlet orifice. Attorney arguments are not the kind of factual evidence that is required to rebut a *prima facie* case of obviousness. *In re Geisler*, 116 F.3d 1465, 1469-70, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997).

Absent factual evidence that Appellants' rectangular inlet orifice is critical to the claimed invention (i.e., unexpected or unpredictable), it is appropriate to consider that the particular shape of the inlet orifice is merely one of numerous configurations a person of ordinary skill in the art would have found obvious for connecting the collection chamber to the reception chamber of a vacuum cleaner as evinced by Yip's disclosure. *Dailey*, 357 F.2d at 672-73, 149 USPQ at 50.

Accordingly, we affirm the Examiner's § 103(a) rejection of argued claim 13 and 19 and non-argued dependent claims 3, 14, 16-18, and 20-22 over Kuwahara in view of Yip.

DEPENDENT CLAIM 15

Appellants argue that neither Yip nor Kuwahara discloses forming the air guide funnel, the partition, and the intervention guard as a single integrally formed structural part (Br. 16).

We have considered Appellants' argument and are unpersuaded for the reasons below.

The Examiner determined that forming the air guide funnel, the partition, and the intervention guard element as a single integrally structural part would have been obvious because such is "within the purview of those skilled in the art" (Answer 6). Citing to *In re Hotte*, 475 F.2d 644, 647, 177 USPQ2d 326, 328 (CCPA 1973), the Examiner further states in the "Response to Arguments" section of the Answer that an integrally formed structural part can be made of multiple pieces that, when assembled as a unit, make a single element (Answer 13). We agree.

Generally, it would have been obvious to make integral that which was separate before, absent a showing that the claimed integration yields unexpected results. *In re Kohno*, 391 F.2d 959, 960, 157 USPQ 275, 276-77 (CCPA 1968), citing *In re Fridolph*, 309 F.2d 509, 513, 135 USPQ 319, 322 (CCPA 1962). The integration of parts must involve more than mere mechanical skill. *Id.*

The Examiner has established that it would have been obvious to make Kuwahara's disclosed partition 8, annular spout 9, and dust filter 37 a single integral structure because such involves mere mechanical skill and no unexpected results have been shown by Appellants. *Kohno*, 391 F.2d at 960, 157 USPQ at 276-77.

We add that Kuwahara discloses that the dust filter 37 is "formed at the center of the said partition 8" (Kuwahara, col. 2, ll. 23-26). This disclosure indicates that the rib-like structure of dust filter 37 is formed as part of the partition (i.e., integrally formed with the partition). Thus, Kuwahara's disclosure reinforces the Examiner's prima facie case of obviousness.

Accordingly, we affirm the Examiner's § 103(a) rejection of argued dependent claim 15 over Kuwahara in view of Yip.

DECISION

The Examiner's rejection of claims 1, 2, 4-7, 9, and 11 under 35 U.S.C. § 102(b) as being unpatentable over Kuwahara is **AFFIRMED**.

The Examiner's rejection of claims 3 and 13-22 under 35 U.S.C. §103(a) as being unpatentable over Kuwahara in view of Yip is **AFFIRMED**.

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The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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